

Amendments to the Drawings:

Please replace the first drawing sheet with the attached drawing sheet, which includes changes to Figures 1 and 2. No new matter is being added.

Remarks:

Claim Status:

Claims 1-5, 7, 11, 15-17, 19, 21, 25, 27, 29, 30, 32-36, 38, 41, 42, 44-50, 52, 53, 56-61 and 63-66 are currently pending in this matter.

Applicants note an inconsistency between the claims examined in the Office Action and the claims elected by Applicants for prosecution. Applicants elected to prosecute Embodiment A, Figures 3-8, corresponding to claims 1-5, 7, 11, 15-19, 21, 25, 27, 29, 30, 32-36, 38, 41, 42, 44-50, 52, **55**, 56, 58-61 and 63-66 in the Response dated April 26, 2007. Claims 1-5, 7, 11, 15-17, 19, 21, 25, 27, 29, 30, 32-36, 38, 41, 42, 44-50, 52, **53**, 56, **57**, 58-61, 63-66 were examined in the Office Action (note inconsistent claims shown in bold text). Applicants assume that all of the claims examined in the Office Action are currently pending, and have responded to the Office Action accordingly.

Page 7 of the Office Action indicates that claim 57 would be allowable if rewritten in independent form. Applicants have rewritten claim 57 into allowable form, as suggested.

Claims 6, 8-10, 12-14, 18, 20, 22-24, 26, 28, 31, 37, 39, 40, 43, 51, 54, 55, and 62 have been canceled without prejudice or disclaimer of the subject matter thereof. Applicants reserve the right to pursue the cancelled claims in a continuation application.

Objections to the Specification under 37 C.F.R. 1.75(d)(1)

The specification stands objected to as failing to provide proper antecedent basis for the recited features of claim 65. Applicants direct the Patent Office's attention to Figure 2 and paragraph 65 of the instant patent application publication, e.g., "[p]referably, the rod seat 50 is undersized relative to the rod diameter." Applicants submit that these sections support claim 65 and request consideration of the objection.

Claim Objections

Claim 61 is objected to because "said grooved wall should be said grooved portion." Applicants have amended claim 61 into proper form.

Claim Rejections Under 35 U.S.C. § 112

Claim 18 stands rejected as being indefinite for failing to point out and claim the subject matter which Applicants regard as the invention. Claim 18 has been canceled without prejudice or disclaimer of the subject matter thereof.

Claim 65 stands rejected for insufficient antecedent basis. Applicants have amended claim 65 into proper form.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 2, 7, 11, 15, 16, 18, 21, 25, 27, 29, 30, 32, 33, 38, 41, 42, 44-47, 52, 56, 58, 63, 64 and 66 stand rejected as being anticipated by Kramer (PCT Patent Application No. WO 2004/021901).

Independent claims 1, 15, 32 and 46, as amended, each recites elements that are neither disclosed nor suggested by Kramer, namely,

said locking means having a substantially cylindrical body defining an end surface for bearing against the screw head and a side surface that is rotatably positionable for directly engaging the rod to lock the rod in the rod receiving means.

Support for the above amendment to claims 1, 15, 32 and 46 may be found in paragraph 55 of the instant patent application publication and Figure 1, for example. No new matter has been added.

Kramer discloses a bone screw 3, a mounting body 4 coupled to the bone screw 3, and a rod 12 captivated by two clamping jaws 10, 11 of the mounting body 4. Kramer's clamping jaws 10, 11 for captivating the rod 12 are not analogous to a circumferential extension along a side of a cylindrical body for directly engaging the rod to lock the rod in a rod receiving means.

Kramer therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claims 1, 15, 32 and 46. Accordingly, Applicants

respectfully submit that independent claims 1, 15, 32 and 46, are patentable over Kramer. The rejected claims that are dependent upon the rejected independent claims are patentable over Kramer for at least the same reasons that the independent claims are patentable.

Independent claim 29, as amended, recites limitations that are neither disclosed nor suggested by Kramer, namely,

said interior portion defining an open passage between the rod seat and the screw head receiving means.

Support for this amendment is provided in Applicants' FIG. 8 and described in paragraph 62 of the instant patent application publication, among other sections. No new matter has been added.

Kramer neither discloses nor suggests an open passage between the rod seat (e.g., clamping jaws 10 and 11) and the screw head receiving means (e.g., cam body 16), as shown in FIG. 1 for example. In contrast, "[f]itted between the cam body 16 and the adjoining clamping jaw 10 there is a substantially U-shaped intermediate piece 18..." as described in paragraph 67 of Kramer.

Kramer therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claim 29. Accordingly, for the foregoing reasons, Applicants respectfully submit that independent claim 29, as amended, is patentable over Kramer and should be allowed. Claim 30 is dependent upon claim 29 and should also be allowed at least as dependent upon an allowable base claim.

Independent claim 63, as amended, recites limitations that are neither disclosed nor suggested by Kramer, namely,

screw receiving means having a partial cylindrical wall for receiving a screw therein, and rod seating means having a substantially U-shaped channel that intersects said partial cylindrical wall of said screw receiving means.

Support for this amendment is provided in Applicants' FIG. 2, for which a replacement sheet is being filed with this reply. No new matter has been added.

Kramer neither discloses nor suggests a screw receiving means having a partial cylindrical wall or a U-shaped channel that intersects said partial cylindrical

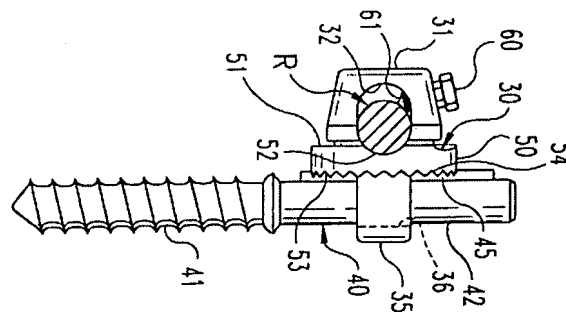
wall, as recited in claim 63. Kramer therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claim 63. Accordingly, for the foregoing reasons, Applicants respectfully submit that independent claim 63, as amended, is patentable over Kramer and should be allowed. The rejected claims that are dependent upon the rejected independent claims should also be allowed at least as dependent upon an allowable base claim.

Claims 1, 2, 4, 5, 15-17, 19, 29, 30, 32, 33, 35, 36, 46, 47, 49, 50, 63, 64 and 66 stand rejected as being anticipated by Ashman (US Patent No. 6,183,473).

Independent claims 1, 15, 32 and 46, as amended, each recites elements that are neither disclosed nor suggested by Ashman, namely,

said locking means having a substantially cylindrical body defining an end surface for bearing against the screw head and a side surface that is rotatably positionable for directly engaging the rod to lock the rod in the rod receiving means.

As best shown in the figure reproduced below, Ashman discloses a spinal implant assembly including a rod 'R,' a bone screw 41, and a connection assembly (items 31 and 35).



Ashman does not disclose a locking means having a substantially cylindrical body defining a side surface rotatably positionable for directly engaging the rod to lock the rod in the rod receiving means, as recited in claims 1, 15, 32 and 46. Ashman's rod R and screw 41 are locked together by adjusting set screw 60 to translate rod R in an axial direction towards screw 41.

Ashman therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claims 1, 15, 32 and 46. Accordingly, for the foregoing reasons, Applicants respectfully submit that independent claims 1, 15, 32 and 46, as amended, are patentable over Ashman. The rejected claims that are dependent upon those rejected independent claims should also be allowable for the same reasons that claims 1, 15, 32 and 46 are allowable.

Independent claim 29, as amended, recites elements that are neither disclosed nor suggested by Ashman, namely,

said interior portion defining an open passage between the rod seat and the screw head receiving means.

Ashman neither discloses nor suggests an open passage between the slot 62 and the second member 35. Ashman therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claim 29. Accordingly, for the foregoing reasons, Applicants respectfully submit that independent claim 29, as amended, is patentable over Ashman and should be allowed. Claim 30 is dependent upon claim 29 and should also be allowable for the same reasons that claim 29 is allowable.

Independent claim 63, as amended, recites limitations that are neither disclosed nor suggested by Ashman, namely,

screw receiving means having a partial cylindrical wall for receiving a screw therein, and rod seating means having a substantially U-shaped channel that intersects said partial cylindrical wall of said screw receiving means within said body portion.

Support for this amendment is provided in Applicants' FIG. 2, for which a replacement sheet is being filed with this reply. No new matter has been added.

Ashman neither discloses nor suggests a screw receiving means having a partial cylindrical wall or a U-shaped channel that intersects said partial cylindrical wall, as recited in claim 63. As best shown in FIG. 10, Ashman's transverse opening 32 and opening 36 do not intersect.

Ashman therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claim 63. Accordingly, for the foregoing reasons,

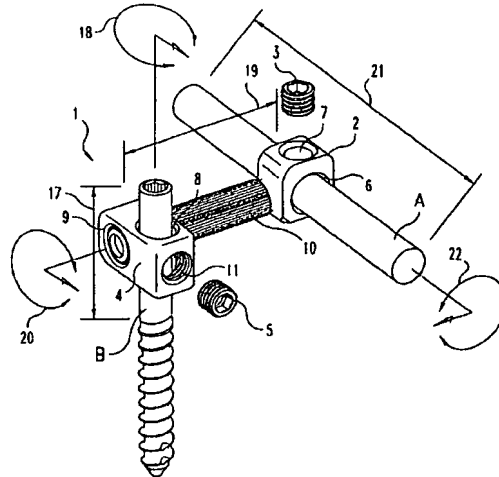
Applicants respectfully submit that independent claim 63 is patentable over Ashman and should be allowed. The rejected claims that are dependent upon claim 63 should also be allowable for at least the same reasons that claim 63 is allowable.

Claims 1-3, 32-34 and 46-48 stand rejected as being anticipated by Taylor (US Patent No. 6,685,705).

Independent claims 1, 32 and 46, as amended, each recites elements that are neither disclosed nor suggested by Taylor, namely,

said locking means having a substantially cylindrical body defining an end surface for bearing against the screw head and a side surface that is rotatably positionable for directly engaging the rod to lock the rod in the rod receiving means.

As best shown in the figure below, Taylor discloses a connection assembly 1 between a spinal implant rod 'A' and a vertebral anchor 'B.' The connection assembly 1 includes a spindle 2, a housing 4, and a projection 10 coupled therebetween.



Taylor does not disclose a locking means having a substantially cylindrical body defining a side surface rotatably positionable for directly engaging the rod to lock the rod in the rod receiving means, as recited in claims 1, 32 and 46. Taylor's set screws 3 and 5 are provided for locking the rod and the screw in a fixed position.

Taylor therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claims 1, 32 and 46. Accordingly, for the foregoing reasons, Applicants respectfully submit that independent claims 1, 32 and 46, as amended, are patentable over Taylor. The rejected claims that are dependent upon claims 1, 32 and 46 should also be allowable for at least the same reasons that claims 1, 32 and 46 are allowable.

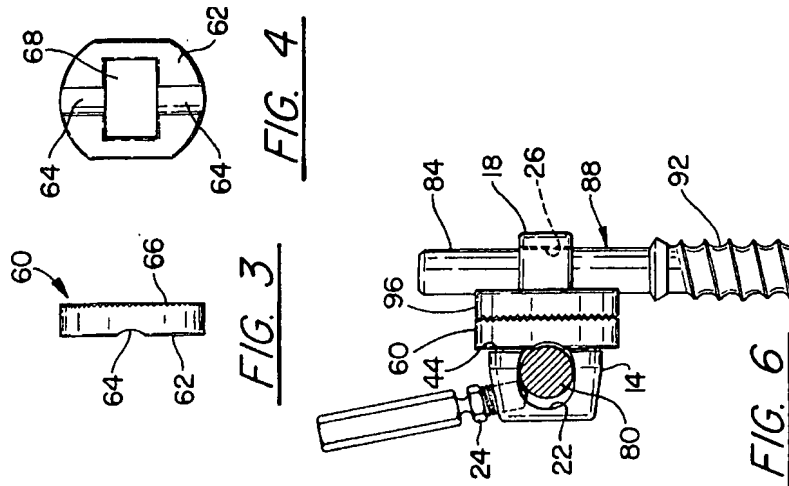
Claims 60 and 61 stand rejected as being anticipated by Simonson (US Patent No. 5,643,263).

Independent claim 60, as amended, recites limitations that are neither disclosed nor suggested by Simonson, namely,

a substantially cylindrical lock body including a circumferential extension along a side of the cylindrical body having a relieved portion for allowing entry of a rod into an assembly and a grooved portion for engaging and maintaining the rod within the assembly, wherein the locking mechanism is rotatable for selectively positioning either the relieved portion or the grooved portion of the circumferential extension adjacent the rod.

Support for this amendment is provided in Applicants' FIGS. 1 and 2, for which a replacement sheet is being filed with this reply. No new matter has been added.

As shown in the Figures reproduced hereinafter, Simonson's spinal implant assembly is similar to Ashman's invention, with the exception of an additional washer 96.



Simonson does not disclose a circumferential extension along a side of the cylindrical body having both a relieved portion and a grooved portion. Simonson's engagement surface 62 and washer connection surface 66 are positioned on opposite sides of interface washer 60. Moreover, the washer 60 is not rotatable for selectively positioning either the engagement surface 62 or the washer connection surface 66 adjacent the rod 80. Only the engagement surface 62 is positioned adjacent the rod 80.

Simonson therefore fails to disclose or suggest every element of Applicants' claimed invention, as recited in claim 60. Accordingly, for the foregoing reasons, Applicants respectfully submit that independent claim 60, as amended, is patentable over Simonson and should be allowed. Claim 61 is dependent upon claim 60 and therefore should be allowed for at least the same reasons that claim 60 is allowable.

Claim Rejections Under 35 U.S.C. § 103

Claim 53, which is dependent upon claim 46, stands rejected as being obvious over Kramer (PCT Patent Application No. WO 2004/021901). As described above, claim 46 recites limitations that are neither disclosed nor suggested by Kramer, namely,

said locking means having a substantially cylindrical body defining an end surface for bearing against the screw head and a side surface that

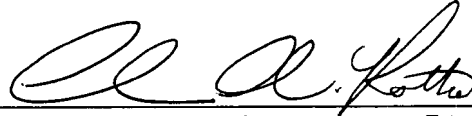
is rotatably positionable for directly engaging the rod to lock the rod in the rod receiving means.

Accordingly, because claim 46 includes limitations that are neither disclosed nor suggested by Kramer, *prima facie* obviousness cannot be established based on the cited reference. Reconsideration of claim 46 is respectfully requested.

Conclusion

In view of the amendments in the claims and the remarks set forth above, Applicants respectfully submit that this application is now in condition for allowance, which action is respectfully requested.

Respectfully submitted,



Christopher A. Rothe, Reg. No. 54,650
Attorney for Applicants
Brett J. Rosen, Reg. No. 56,047
Registered Patent Agent

CAR/BJR/cmd/ap

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